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EXAMINER

OLSEN, KAJ K

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/074,219
Filing Date: February 12, 2002
Appellant(s): WEST ET AL.

Ernest V. Linek
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed November 21, 2006 appealing from the Office action mailed April 26, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is incorrect. A correct statement of the status of the claims is as follows:

The examiner has withdrawn the outstanding 112 rejections of the claims. Hence, claims 10-13 are hereby merely objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Appellant's listed status for claims 1-9, 14, and 15 is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows:

WITHDRAWN REJECTIONS

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The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. The outstanding 112 rejection against claims 1 and 10-13 (Rejection No. 1) has been withdrawn.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,608,148	Frollini, Jr. et al.	8-1986
4,543,175	Subsara et al.	9-1985
5,160,420	Marsoner et al.	11-1992

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Frollini, Jr. et al (USP 4,608,148).

Frollini teaches a combination glass pH electrode that includes a sensing electrode 44, a reference electrode 42 possessing a standard potential, an outer tube 48 and a liquid junction 36. Frollini further discloses an inner tube 22 centrally located within the outer tube and connected by to the outer tube by a top seal 54 and a bottom seal 52 with a reference electrolyte compartment 28 located between the inner and outer tubes and the top and bottom seals having an opening 50 in the outer tube. See fig. 1 and col. 3, l. 9 through col. 4, l. 11. This opening 50 would function as a vent for the combination sensor. With respect to the outer tube having the liquid junction, fig. 1 of Frollini does not teach this (i.e. the liquid junction 36 is in the bottom seal 52. However, the embodiments of fig. 2 and 3 both show that the liquid junction (136 or

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236) can be located on the outer tube (148 or 248) as well. It would appear that fig. 2 and 3 would also meet the limitations of claim 1 because they appear to show all the limitations of the claims including the sealing on both the top and bottom of the outer tube even though they give no details about the sealing. In the event that fig. 2 and 3 are deemed to not meet all the limitations of claim 1, fig. 2 and 3 establish that placing the liquid junction any number of places including on the outer tube was obvious. It would have been obvious to one of ordinary skill in the art at the time the invention was being made for Frollini to utilize the liquid junction location of fig. 2 and 3 for the sensor embodiment of fig. 1 because the substitution of one known location for the liquid junction for another known location requires only routine skill in the art.

With respect to that vent minimizing moisture loss or pickup while admitted sufficient air, because these two functions rely on some relative interpretation of what it means to “minimize” moisture pickup and allow for the admittance of “sufficient air”, the unspecified dimensions of the hole of Frollini would meet the claim giving the claim language its broadest reasonable interpretation. The small size of the hole of Frollini would reduce moisture loss or pickup and the hole would clearly be able to allow air flow under vacuum because it allows flow without vacuum. Appellant hasn’t defined the minimization and the admittance in such a manner that reads free of whatever the dimensions of the hole of Frollini are. In addition, claims 10 and 12 previously further defined the “minimizes” of claim 1 as being a mere reduction or retardation of the moisture loss or pickup. Because the small hole of Frollini would reduce or retard moisture loss or pickup at least to some extent, it would thereby meet the claimed “minimizes” giving the claim language its broadest reasonable interpretation. With respect to the limitation drawn to not requiring a calibration for up to two years, this limitation entirely

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depends on how the sensor is utilized and doesn't explicitly further define the structure of the invention. For example, a sensor that remains unused wouldn't need any calibration. An operation that doesn't require high accuracy wouldn't need any calibration.

Claim 1 in the alternative is rejected under 35 U.S.C. 103(a) as being unpatentable over Frollini in view of Subsara et al (USP 4,543,175) or Marsoner et al (USP 5,160,420).

In the previous rejection, the examiner set forth that Appellant has not defined the minimization and admittance of sufficient air with enough specificity to read free of the teaching of Frollini by itself. However, even if the examiner were to read claim 1 in a manner that did not read on the hole of Frollini, then the claimed vent system would still be obvious in view of Subsara and Marsoner. In particular, Subsara teaches the use of a sleeve 20 that can slide over the refill opening to permit the opening to be closed. See fig. 2 and col. 2, ll. 10-15. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Subsara for the refill opening and vent of Frollini so that the opening can be sealed so as to prevent electrolyte loss when the electrode is not being operated. Because this sleeve of Subsara would be capable partially covering the hole (e.g. when the seal is halfway or three-quarters of the way over the hole), the sleeve of Subsara would be capable of providing a level of sealing that would meet the claim limitations in this alternative interpretation. In other words, if the hole of Frollini were interpreted as being too large to meet the claimed vent requirements (interpreted in the alternative), a sleeve like that taught by Subsara would have been capable of partially obscuring that hole until it meant the claim limitation. Although the prior art does not disclose using this sleeve as a partial obscurant, it is unnecessary for the prior art to disclose doing so as long as the prior art were capable of providing the specified function.

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With respect to Marsoner, Marsoner teaches that reference electrolyte can be delivered to and released from a reference electrode via a series of sealed tubes 21 and 22 so as to automatically refill the reference electrode and prevent contamination of the electrode with sample. See fig. 2, col. 4, ll. 9-14 and col. 5, l. 60 through col. 6, l. 26. It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Marsoner for the electrode of Frollini so that reference electrolyte can be automatically delivered and undesirable mixing of sample and electrolyte can be avoided. With respect to the thereby claimed vent, because Marsoner utilizes narrow tubes that are sufficiently long to connect them to a source of reference electrolyte 28 or waste tank 8, they would presumably either meet the claimed vent requirement (note: Appellant utilizes tubes only 10 mm long) or tubes of sufficient length to meet the claimed requirement would have been obvious.

(10) Response to Argument

With respect to the arguments concerning rejection number 2, Appellant urges that Frollini does not anticipate the claimed invention because it does not teach a reference electrolyte compartment that minimizes moisture loss or pick-up, yet would permit the flow of sufficient air under partial vacuum. However, as the examiner has pointed out in the previous office actions, appellants "minimizes" is not a true minimization of moisture loss or pick-up, but rather a relative minimization. A true minimization of moisture loss or pick-up would require the use of a complete seal or an infinitesimally small vent that allowed no moisture loss or pick-up. However, Appellant's vent is not a complete seal nor an infinitesimally small hole. Moreover, claim 10 originally further defined the minimization to "serve to reduce the rate at which moisture can diffuse into or out of the electrolyte compartment" and claim 12 originally specified

that the minimization was merely “serving to retard diffusion of moisture into or out of the electrolyte compartment”. The examiner maintains that *any* hole or vent, regardless of how large or small the hole or vent is, would reduce the rate at which moisture can diffuse or would retard the diffusion of moisture into or out of the electrolyte compartment, because any hole would partially obstruct the flow of moisture in comparison with a completely open electrolyte compartment. Moreover, any sized hole or vent would also permit “sufficient air” (another relative term) to flow under the application of a partial vacuum because macroscopic holes, like taught by Frollini, would always permit air-flow when a pressure differential is applied across the hole. The examiner would stress the appellant has not defined the presence of a source of partial vacuum source, but has merely defined that the vent would admit sufficient air in the event of a partial vacuum application.

Appellant’s attempt to further define this “minimizes” and “sufficient air” by specifying that the electrode need no calibration for up to two years is also unpersuasive. First, the examiner does not see anything in claim 1 that explicitly ties in the relative “minimizes” and “sufficient air” to this lack of need for a calibration. In other words, there is nothing in claim 1 that requires the earlier “minimizes” and “sufficient air” to be the reason that one doesn’t need calibration as the appellant has not tied these limitations together. Presumably one could seal the vent between uses or could store the combination electrode in an inert atmosphere in order to prevent moisture loss or pick-up. In both hypothetical cases, the vent that provides the “minimizes” and “sufficient air” would not necessarily be the reason that the sensor does not require any calibration. Second, this limitation relies entirely on how the sensor in question is to

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be utilized. If the sensor is not used at all, it does not require calibration. If the user does not require or care for high accuracy, the sensor does not need calibration.

Appellant urges that the “large opening 50” of Frollini (appellant’s term, not Frollini’s) would make the electrode of Frollini be like the electrodes of fig. 7 and p. 18 of the specification, and these prior art electrodes would require calibration more often than once a year. First, appellant appears to be engaging in improper guilt by association. Appellant presumably didn’t test the explicit electrode of Frollini and Frollini never disclosed the dimensions of the its hole were so it is entirely unclear why appellant feels free to presume the opening of Frollini is like that tested by the prior art and that that opening would have resulted in the set forth drift of fig. 7. Second, as discussed above, the lack of a “need” for calibration does not further define the structure of the electrode nor does it explicitly further define the “minimizes” or “sufficient air” from earlier in the claim. Appellant has provided a number of evidentiary references in the appendix describing how often various pH electrodes in the art should be recalibrated. Like discussed above, unless these references are explicitly drawn to the electrode disclosed by Frollini, one cannot presume that Frollini would also require these various frequencies of recalibration. In addition, just because a pH electrode should be recalibrated every week, month, etc, doesn’t mean that a pH electrode needs recalibration. If you don’t use the electrode or don’t care about accuracy, then the electrode doesn’t need recalibration.

With respect to the arguments concerning rejection number 3, appellant urges that fig. 2 and 3, contrary to what the examiner suggests, does not show the reference junction being located on the outer tube. It is unclear how appellant came to this conclusion. Fig. 2 and 3 clearly show the reference junctions (136, 236) being located on the vertical wall portion of the

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outer tube, in contrast to fig. 1 where the reference junction 36 is disclosed below the outer tube

48. This would clearly meet the claim limitation of an "outer tube having a liquid junction".

Appellant's urges that Frollini suggests the liquid junctions 136 and 236 are located in the bottom seals in an identical manner to that of fig. 1. Frollini does not state this and the appellant's characterization of these cited passages in Frollini is clearly false. What Frollini explicitly states is that the elements represented by reference numbers 136 and 236 are identical to or substantially identical to the element represented by reference number 36 (clearly different from how the appellant characterized these passages). Because 136 and 236 are the reference junctions for embodiments of fig. 2 and 3, then they are substantially identical to reference junction 36 even though they are located in a different position (as fig. 2 and 3 show).

Moreover, the embodiments of fig. 2 and 3 lack a rubber bung 52 so it is unclear how appellant can urge that the embodiments of fig. 2 and 3 would be constructed in the same manner as fig. 1. The examiner would note that Frollini stated that elements 222 and 240 are identical or substantially identical to elements 22 and 40 even though the shape of each of these elements in fig. 1 and 3 are clearly different, which clearly indicates that appellant is clearly misinterpreting these passages in question.

With respect to rejection number 4 and Subsara, appellant urges that the examiner's use of Subsara is relying on impermissible hindsight reconstruction. It is unclear whether it is the use of the sleeve of Subsara for Frollini or whether the partially obscuring is what the Appellant is suggesting is impermissible hindsight. If it is the former, it is unclear how Appellant came to that conclusion as the combination of the sleeve of Subsara for the electrode of Frollini is clearly rooted in the teachings of the prior art. If it is the latter, it has clearly been the examiner position

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that it is unnecessary for Subsara to suggest partially obscuring the hole as long as they teach structure that could partially obscure the hole. Hence, the issue of impermissible hindsight is irrelevant to the issue at hand. Claim 1 is drawn to an apparatus and the prior art need only provide structure that would be capable of performing the function of the claimed apparatus. Because the sleeve of Subsara would be capable of partially obscuring the vent of Frollini, thereby meeting the alternative interpretation of the vent limitations, it thereby meets the claims. For the sake of analogy, this would be like a prior art reference that teaches a 10-100 Ω variable resistor and having that read on an apparatus claim that requires a 40 Ω resistor. Because the prior art could dial its variable resistor to 40 Ω , the examiner believes it meets the structural requirements of the claim regardless of whether the reference explicitly taught the use of 40 Ω .

With respect to rejection 4 and Marsoner, appellant urges that they do not claim an automatic delivery of reference electrolyte. That is irrelevant because the claim doesn't negatively teach away from an automatic delivery system either. Claim 1 is constructed with open language (i.e. comprises) so the claimed electrode could be utilized with an automatic delivery of electrolyte. Appellant also urges that the sealed tubes of Marsoner do not prevent the undesirable mixing, but rather the capillary tube 53 does. First, the cited passage by the appellant appears to contradict their conclusion. In particular, Marsoner states in the cited passage that any sample liquid in the reference electrode would be removed during the next cleaning cycle. The tubes provide the cleaning cycle in question and also providing in part the differential vacuum that was utilized for the flushing. So the examiner believes that the tubes, which enable the use of a cleaning cycle in the first place and which thereby enable a process of removing the sample from the reference electrode, does in fact prevent mixing of the sample and

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electrolyte contrary to the appellant's conclusion. Second, the examiner's motivation statement for Marsoner was two-pronged and the examiner also suggested that the tubes allow for automatic delivery of sample. Appellant's arguments do not address that issue. Appellant also urges that Marsoner would not provide the limitation of providing sufficient air under the influence of a partial vacuum under the influence of gravity because Marsoner is a closed system. However, Appellant is not claiming a partial vacuum under the influence of gravity *per se*, but rather is defining the dimensions of the vent based on how it functions under a partial vacuum. Hence, it is only necessary for the prior art to disclose a vent that would have the set forth properties under the application of a partial vacuum under the influence of gravity. The structure disclosed by both Frollini and Marsoner would do so.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Kaj K. Olsen



Conferees:

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